Abstract of the Disclosure

Systems and methods automatically design a system's architecture by modeling the architectural complexity of large-scale distributed systems to drive a partitioning and allocation algorithm. The result is a configuration based on the structure of the software tasks

5   and data access, and the capacities of the hardware. Coupling and cohesion are relative, dependent on the ratio of load to capacity, and not independent software characteristics. The partitioning and allocation algorithm includes tradeoffs between processor utilization, memory utilization, inter-processor communication, and peripheral contention. The systems and methods take into account both precedence constraints and the directional flow of data.

10   Further aspects include interleaving the decisions of database segmentation and software distribution. This approach is demonstrated with a simplified example of a real distributed system.